
# Depleted Uranium (DU) Medical Management

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# Learning Objectives

- Define appropriate DU medical management and review the service-specific DU programs
- Discuss Deployment Health Clinical Center's role in DU medical management
- Describe available tools for assisting physicians in DU medical management

# DoD Policies for Depleted Uranium (DU) Medical Management

## Why Were Policies Issued?

- DoD's commitment to ensuring the health concerns of our redeploying personnel are addressed
- Quantify and document DU exposure
- Identify DU-exposed service members for referral to VA DU Follow-up Program to determine any long-term implications of DU exposure
- Historical precedent (Operation Desert Shield/Desert Storm)

# DoD Policies for DU Medical Management

## What Are the Policies?

- 30 May 2003, OSD(HA) 03-012, Policy for OIF Depleted Uranium (DU) Medical Management
- 6 Feb 2004, OSD(HA) 04-004, DoD Deployment Biomonitoring Policy and Approved Bioassays for Depleted Uranium and Lead
- 9 Apr 2004, OSD(HA) Memorandum, OIF Depleted Uranium Medical Management

# OSD(HA) 03-012 Policy for OIF DU Medical Management, 30 May 03

## What Is Required?

- Identification of all OIF service members, DoD civilians, and volunteers accompanying US Forces with potential DU exposure
  - Review of operational events (friendly fire)
  - Post-Deployment Health Assessment (DD Form 2796)
- Qualitative assessment of level of exposure for service members and government civilians (refer others)
- DU bioassays for those with potential for significant exposure

# Identification and Assessment of Possible DU Exposure

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- **Level I**: Personnel struck by DU munitions/fragments or who were in, on, or within 50 meters of an armored vehicle when it was struck
- **Level II**: Personnel who routinely enter DU-damaged vehicles or fight fires involving DU munitions as part of their military occupational specialty
- **Level III**: Personnel with “incidental” (insignificant DU exposures) -- infrequent exposure not expected to result in significant uptake of DU

# Urine DU Bioassays

- Required for Levels I and II exposures; optional for Level III
  - 24-hour urine samples taken within 180 days (ideally) of exposure sent to approved lab IAW with Service guidance
  - Bioassays consist of testing urine, normalized for urine creatinine values, for
    - total uranium
    - presence of DU (isotopic analysis)
  - Submission of Depleted Uranium Questionnaire, and Health Survey (DD Forms 2872 and 2872-1 Test) with urine samples

# OSD(HA) 03-012 DU Policy
## What Is Required? (Cont)

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- Personnel notified of their results
- Referral to Baltimore VA Medical Center DU Follow-Up Program offered to those with embedded DU fragments and others with documented significant exposures
- Use of health risk communication practices throughout the process

# OSD(HA) 04-004, DoD Deployment Biomonitoring Policy and Approved Bioassays for Depleted Uranium and Lead, 6 Feb 04

- Definition of Biomonitoring – the assessment of individual exposures to various substances, especially harmful chemicals, by measuring the parent compound or its metabolites in biological media (e.g., blood, urine, hair, and breath) of exposed personnel
- Policy contains:
  - Criteria for the approval of bioassays to support deployment operations
  - Guidance and procedures for DU bioassay
    - Includes requirement for forwarding any embedded fragments which have been removed for analysis

# OSD(HA) Memorandum, OIF DU Medical Management, 9 Apr 04

- Requires Services to submit semi-annual report of DU urine bioassay results, including VA referrals
- Clarifies OSD(HA) 03-012, Policy for OIF Depleted Uranium (DU) Medical Management, 30 May 03:
  - DU-Exposed Personnel Identification
    - In addition to using DD Form 2796 to identify DU-exposed personnel, advises MTFs to locate units involved in operations or incidents resulting in possible DU exposure
  - DU Exposure Assessment
    - Directs use of DoD DU Questionnaire and Health Survey forms (DD Form 2872 Test and DD Form 2872-1 Test) for evaluation and assigning exposure category (Level I, II, or III)

# OSD(HA) Memorandum, OIF DU Medical Management, 9 Apr 04 (Cont)

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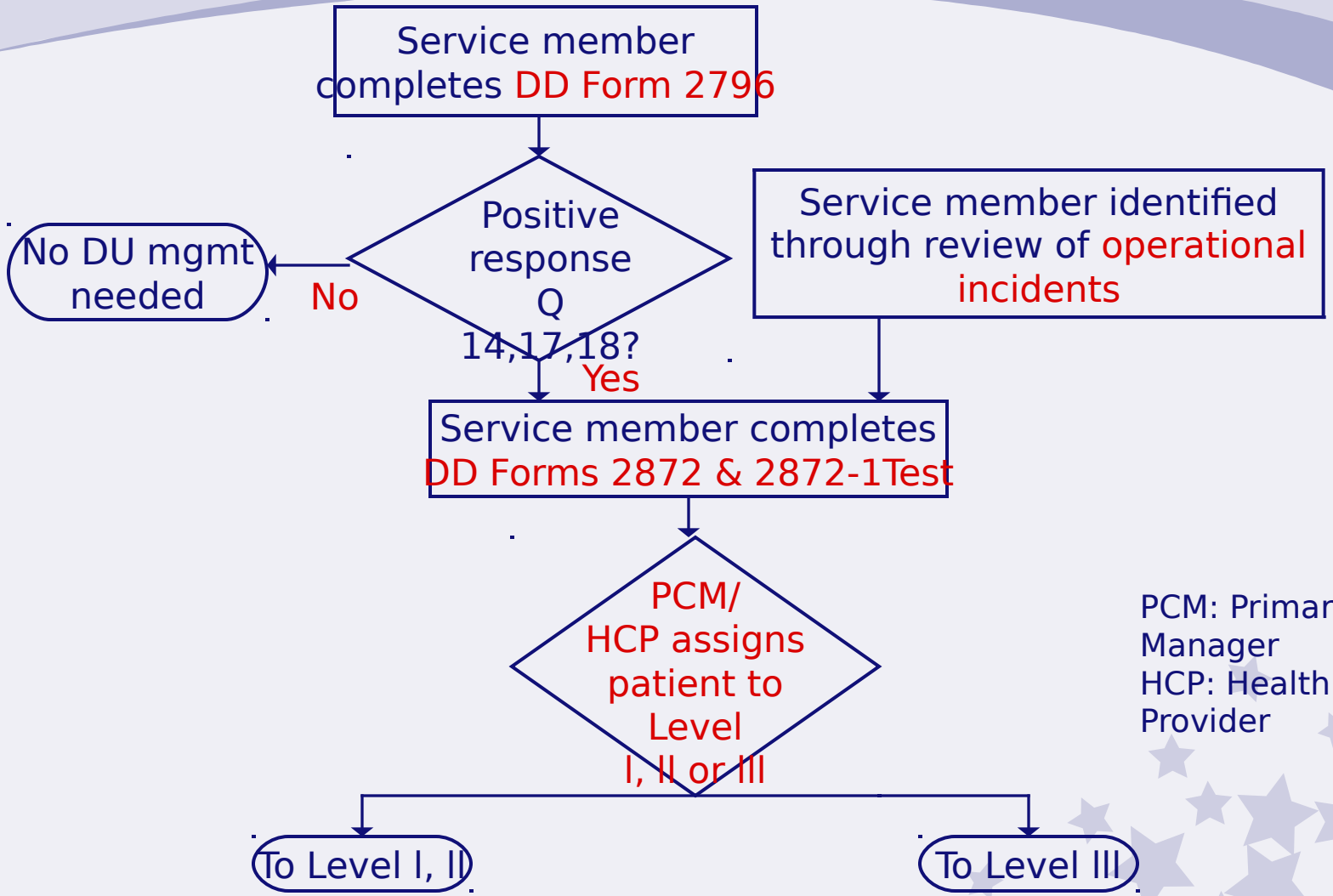
- DU Bioassay Procedures
  - Test even if it is more than 180 days after exposure
  - Testing laboratories should store 250 ml aliquot of each specimen indefinitely
  - Provides Protocol for DU Urine Validation Testing and Referrals to Baltimore VA Follow-Up Program
  - VA referrals must be coordinated through the DHCC
- DU Exposure Surveillance and Tracking
  - Sufficiently detailed information should be collected regarding exposure incidents to ensure appropriate characterization of service member exposure
- Archiving and DU Case Management
  - Requires Service labs and Baltimore VA to forward all DU exposure assessment and testing results to DHCC to archive

# Algorithm for Identifying Potential DU Exposures




PCM: Primary Care Manager
HCP: Health Care Provider

# Depleted Uranium (DU) Questionnaire DD Form 2872 Test

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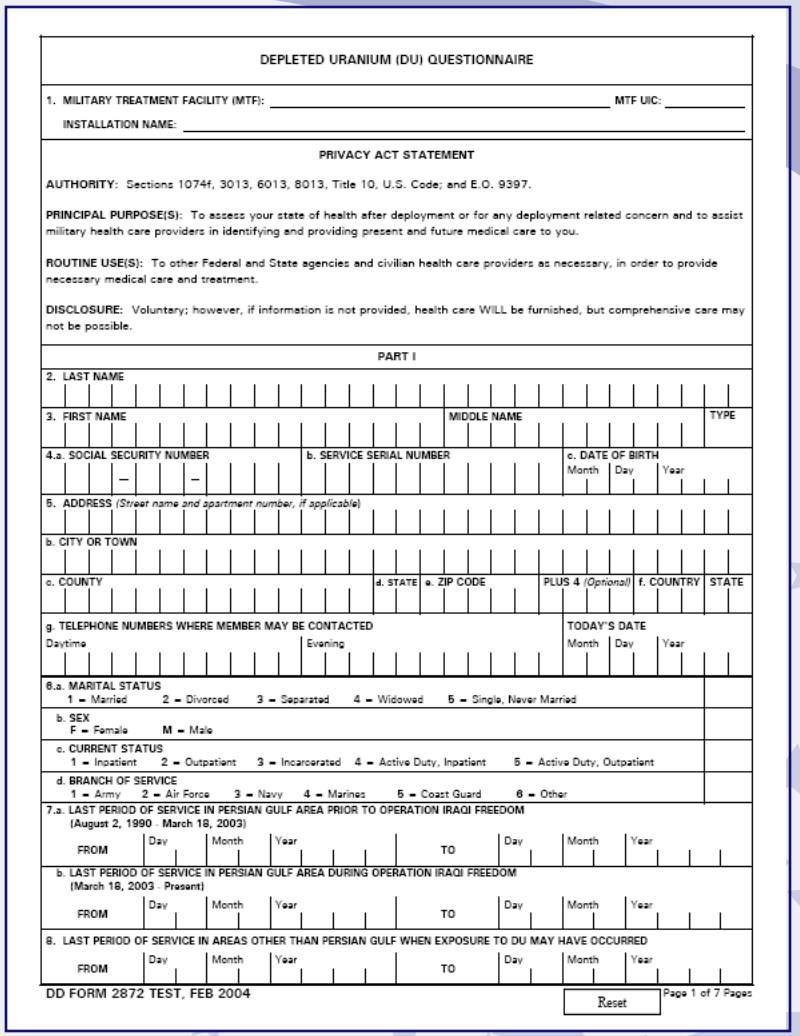
- Modification of VA Form 10-9009D
- 3 Parts
  - Demographic data
  - History and classification of DU exposure
  - Urine uranium results
- Published as test form Feb 04
- Currently under revision



DEPLETED URANIUM (DU) QUESTIONNAIRE

1. MILITARY TREATMENT FACILITY (MTF): _____ MTF UIC: _____
INSTALLATION NAME: _____

PRIVACY ACT STATEMENT

**AUTHORITY:** Sections 1074f, 3013, 6013, 8013, Title 10, U.S. Code; and E.O. 9397.

**PRINCIPAL PURPOSE(S):** To assess your state of health after deployment or for any deployment related concern and to assist military health care providers in identifying and providing present and future medical care to you.

**ROUTINE USE(S):** To other Federal and State agencies and civilian health care providers as necessary, in order to provide necessary medical care and treatment.

**DISCLOSURE:** Voluntary; however, if information is not provided, health care WILL be furnished, but comprehensive care may not be possible.

PART I

2. LAST NAME

3. FIRST NAME | MIDDLE NAME | TYPE

4.a. SOCIAL SECURITY NUMBER | b. SERVICE SERIAL NUMBER | c. DATE OF BIRTH (Month, Day, Year)

5. ADDRESS *(Street name and apartment number, if applicable)*

b. CITY OR TOWN

c. COUNTY | d. STATE | e. ZIP CODE | PLUS 4 *(Optional)* | f. COUNTRY | STATE

g. TELEPHONE NUMBERS WHERE MEMBER MAY BE CONTACTED (Daytime / Evening) | TODAY'S DATE (Month, Day, Year)

6.a. MARITAL STATUS
1 = Married 2 = Divorced 3 = Separated 4 = Widowed 5 = Single, Never Married

b. SEX
F = Female M = Male

c. CURRENT STATUS
1 = Inpatient 2 = Outpatient 3 = Incarcerated 4 = Active Duty, Inpatient 5 = Active Duty, Outpatient

d. BRANCH OF SERVICE
1 = Army 2 = Air Force 3 = Navy 4 = Marines 5 = Coast Guard 6 = Other

7.a. LAST PERIOD OF SERVICE IN PERSIAN GULF AREA PRIOR TO OPERATION IRAQI FREEDOM
(August 2, 1990 - March 18, 2003)
FROM (Day, Month, Year) TO (Day, Month, Year)

b. LAST PERIOD OF SERVICE IN PERSIAN GULF AREA DURING OPERATION IRAQI FREEDOM
(March 18, 2003 - Present)
FROM (Day, Month, Year) TO (Day, Month, Year)

8. LAST PERIOD OF SERVICE IN AREAS OTHER THAN PERSIAN GULF WHEN EXPOSURE TO DU MAY HAVE OCCURRED
FROM (Day, Month, Year) TO (Day, Month, Year)

DD FORM 2872 TEST, FEB 2004 Reset Page 1 of 7 Pages

# Revision to DU Questionnaire
# DD Form 2872 Test

- DD Form 2872 Test being revised to improve data collection and patient follow-up
- Additions made to form include:
  - Demographic data section
    - Point of contact who will always know how to reach service member
    - Permanent military status at time of exposure and current military status
    - Permanent unit and attached unit during deployment
    - Email address
  - Headings for types of exposure circumstances
  - Description of possible DU exposure incident section
    - Including other service members involved

# Health Survey
# DD Form 2872-1 Test

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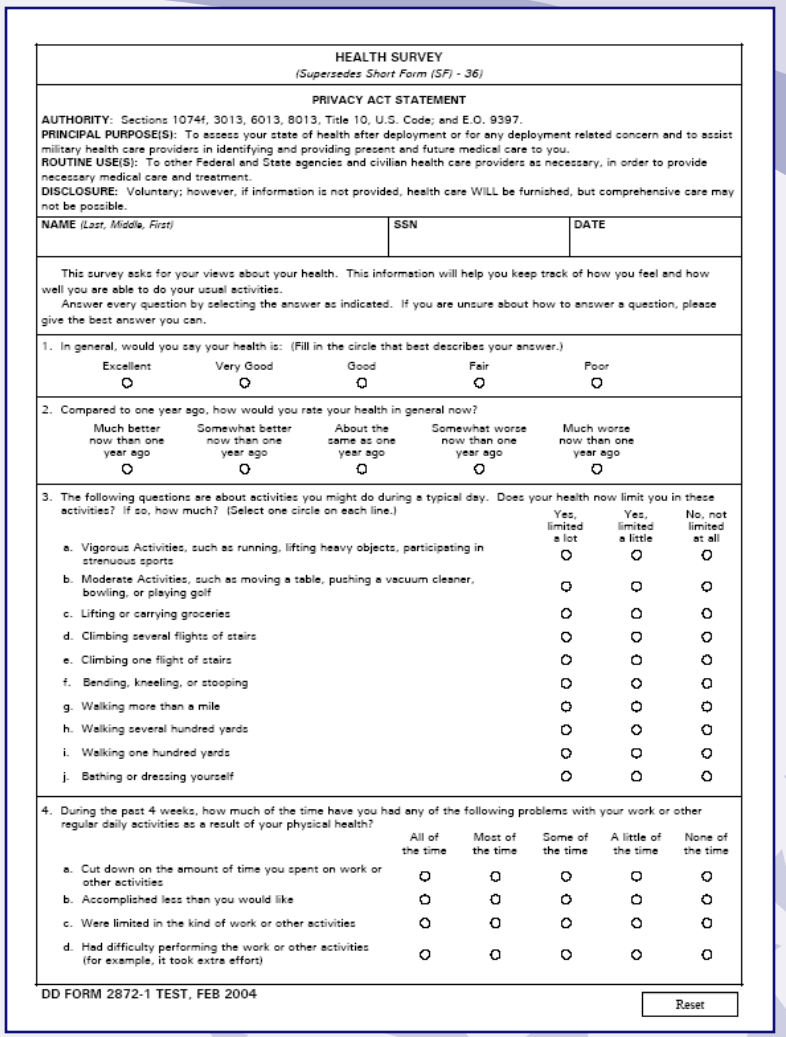
- Short, generic measure of health-related functioning
- Consists of 36 questions asking the patient to describe physical or emotional problems over the past four weeks
- Contents identical to Short Form (SF) 36
- Published as test form Feb 04



**HEALTH SURVEY**
*(Supersedes Short Form (SF) - 36)*

**PRIVACY ACT STATEMENT**

**AUTHORITY:** Sections 1074f, 3013, 6013, 8013, Title 10, U.S. Code; and E.O. 9397.
**PRINCIPAL PURPOSE(S):** To assess your state of health after deployment or for any deployment related concern and to assist military health care providers in identifying and providing present and future medical care to you.
**ROUTINE USE(S):** To other Federal and State agencies and civilian health care providers as necessary, in order to provide necessary medical care and treatment.
**DISCLOSURE:** Voluntary; however, if information is not provided, health care WILL be furnished, but comprehensive care may not be possible.

| NAME *(Last, Middle, First)* | SSN | DATE |
|---|---|---|
| | | |

This survey asks for your views about your health. This information will help you keep track of how you feel and how well you are able to do your usual activities.
Answer every question by selecting the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is: (Fill in the circle that best describes your answer.)

| Excellent | Very Good | Good | Fair | Poor |
|---|---|---|---|---|
| O | O | O | O | O |

2. Compared to one year ago, how would you rate your health in general now?

| Much better now than one year ago | Somewhat better now than one year ago | About the same as one year ago | Somewhat worse now than one year ago | Much worse now than one year ago |
|---|---|---|---|---|
| O | O | O | O | O |

3. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much? (Select one circle on each line.)

| | Yes, limited a lot | Yes, limited a little | No, not limited at all |
|---|---|---|---|
| a. Vigorous Activities, such as running, lifting heavy objects, participating in strenuous sports | O | O | O |
| b. Moderate Activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf | O | O | O |
| c. Lifting or carrying groceries | O | O | O |
| d. Climbing several flights of stairs | O | O | O |
| e. Climbing one flight of stairs | O | O | O |
| f. Bending, kneeling, or stooping | O | O | O |
| g. Walking more than a mile | O | O | O |
| h. Walking several hundred yards | O | O | O |
| i. Walking one hundred yards | O | O | O |
| j. Bathing or dressing yourself | O | O | O |

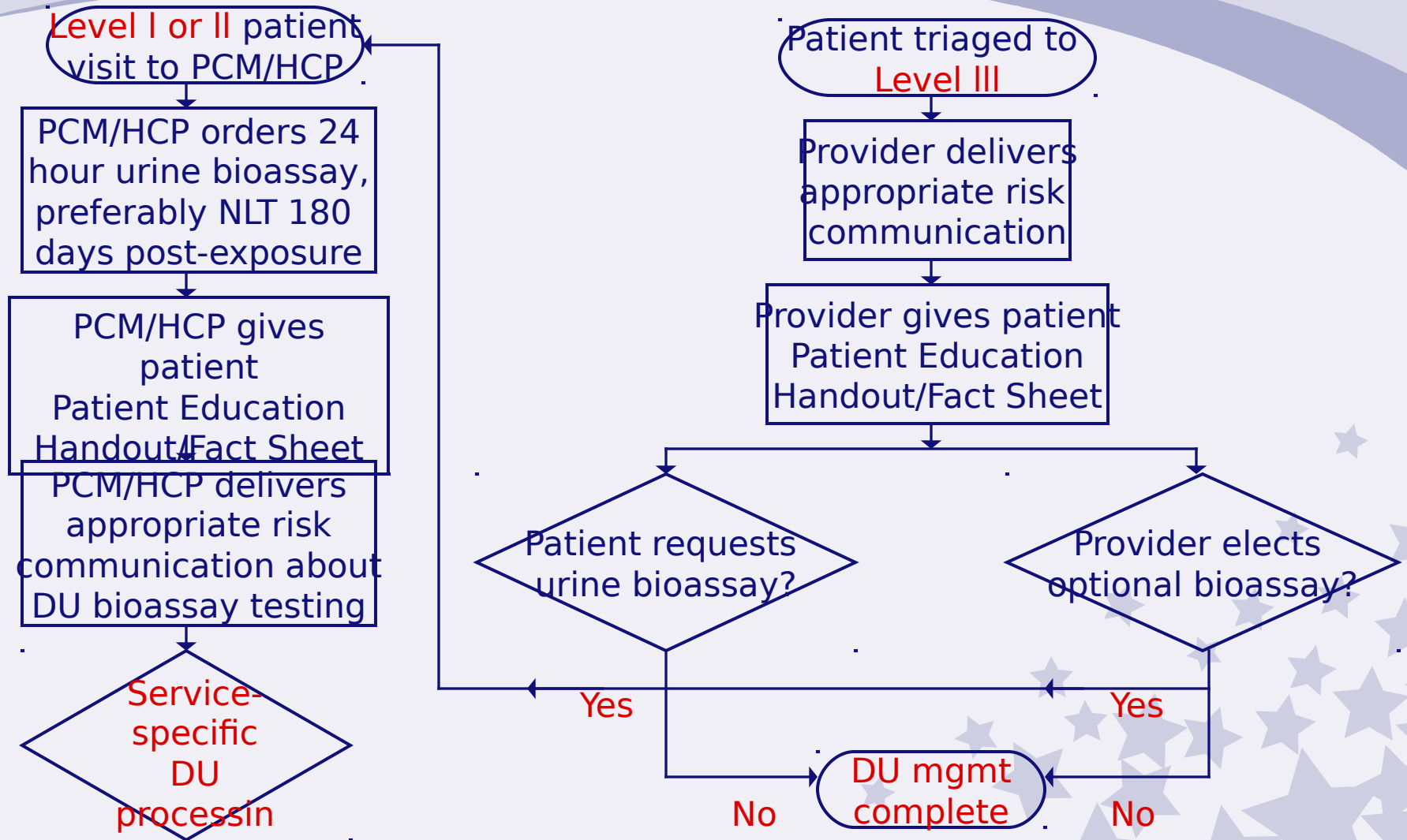
4. During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

| | All of the time | Most of the time | Some of the time | A little of the time | None of the time |
|---|---|---|---|---|---|
| a. Cut down on the amount of time you spent on work or other activities | O | O | O | O | O |
| b. Accomplished less than you would like | O | O | O | O | O |
| c. Were limited in the kind of work or other activities | O | O | O | O | O |
| d. Had difficulty performing the work or other activities (for example, it took extra effort) | O | O | O | O | O |

DD FORM 2872-1 TEST, FEB 2004

Reset

# Process for Ordering DU Bioassay



# Laboratory Testing

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## 24-Hour Urine Samples Sent to Service-Designated Lab

- Army – USACHPPM Lab
- Air Force – AFIOH Lab
- Navy/Marines – VA Lab

## Urine Creatinine Analysis Performed at Service-Specified Lab

- Army – Local MTF Lab
  (Results sent to USACHPPM with urine specimen)
- Air Force – Local MTF Lab
  (Results sent to AFIOH with urine specimen)
- Navy/Marines – VA Lab

USACHPPM – US Army Center for Health Promotion and Preventive Med
AFIOH – Air Force Institute for Operational Health
VA – Baltimore Veterans Affairs Medical Center

# Testing Embedded Fragments

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- HA Policy 04-004 states:

  "Forward any embedded fragments removed from injured personnel to an appropriate laboratory for analysis of the metal composition."

- Testing is useful for verifying the source of DU exposure and identifying other types of fragments that may pose potential health risks or require medical follow-up

# Laboratory Analysis for Uranium and Depleted Uranium

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## Army

USACHPPM
(Uranium level and isotopic analysis when uranium level is ≥ 268ng/L)

↓

AFIP
(Isotopic analysis when uranium level is <268ng/L)

## Air Force

AFIOH
↓
VA
↓
AFIP
(Uranium level and isotopic analysis)

## Navy/Marines

VA
↓
AFIP
(Uranium level and isotopic analysis)

# DU Bioassay Results

- Bioassay results and interpretation prepared by
  - USACHPPM - Army
  - Baltimore VA – Air Force, Navy/Marines

# DU Bioassay Results (Cont)

- Results distributed to
  - Ordering provider/lab
    - Notifies patient of results
    - Ensures results are filed in patients' medical record
  - Air Force and Navy/Marine patients receive letter with results from VA
  - Service-specific dosimetry center
  - Deployment Health Clinical Center for central archiving

# Service-Specific DU Policies

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- Army - OTSG/MEDCOM Policy Memo 05-003, Medical Management of Army Personnel Exposed to Depleted Uranium (DU), 4 Mar 05
- Air Force - SG Policy Letter #03-003, Air Force Medical Service Policy on Operation IRAQI FREEDOM Depleted Uranium (DU) Medical Management, 14 Aug 03
- Navy/Marines - BUMED Instruction 6470.10B, Initial Management of Irradiated or Radioactively Contaminated Personnel, 26 Sep 03

# Army DU Medical Management Policy

- Original OTSG/MEDCOM Policy Memo 03-007, 13 Jan 04 superseded by Memo 05-003, 4 Mar 05
- Major changes:
  - Eliminated the requirement to collect urine specimens in Theater for DU bioassay
  - Recommended the assignment of a case manager at each MTF to:
    - Act as single POC at the MTF for DU issues
    - Facilitate transmittal of DU bioassay results
    - Coordinate referrals to VA DU Follow-Up Program through the Deployment Health Clinical Center

# Service Summary OIF DU Bioassay Results 1 Jun 03 – 31 Mar 05

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| Exposure Category | Army | Navy/ Marines | Air Force | TOTAL | Elevated Total Uranium | Detect-able DU | Retained Fragments |
|---|---|---|---|---|---|---|---|
| **Level I** | 175 | 41 | 2 | **218** | 8 | 6 | 12 |
| **Level II** | 223 | 203 | 7 | **433** | 13 | 0 | 1 |
| **Level III** | 187 | 22 | 7 | **216** | 2 | 0 | 6 |
| **Uncat** | 1093 | 10 | 0 | **1103** | 113 | 1 | 28 |
| **Total** | **1678** | **276** | **16** | **1970** | **136** | **7** | **47** |

# Semi-Annual DU Bioassay Results
# 1 Jun 03 – 31 Mar 05

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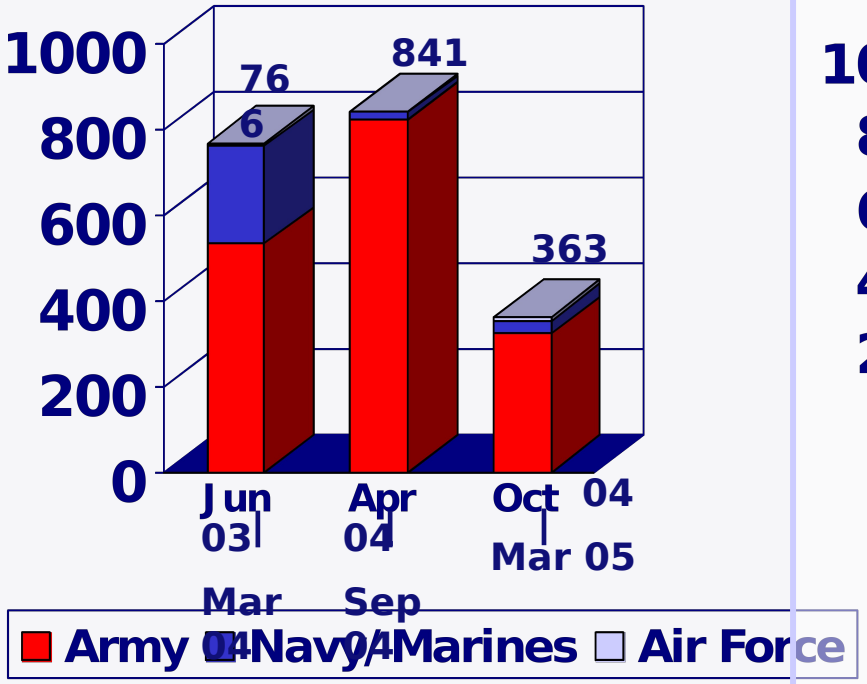
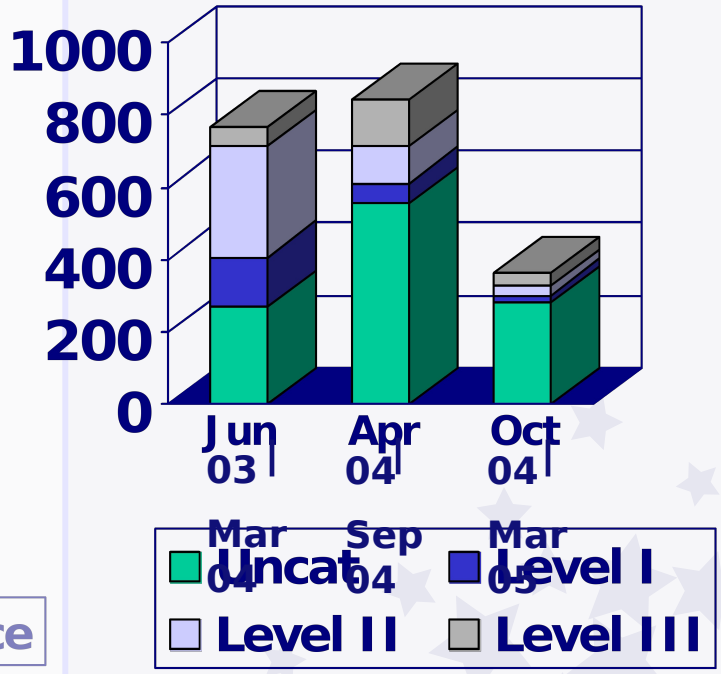
## DU Bioassays by Service




## DU Bioassays by Exposure Category



# Referral to Baltimore VA DU Follow-Up Program

- All service members with embedded DU fragments and others with positive DU bioassay results will be offered referral to the VA DU Follow-Up Program
  - Biennial comprehensive physical examinations and repeat DU bioassays (2 1/2 days)
- In accordance with ASD Memorandum 9 April 2004, all referrals must be coordinated through the Deployment Health Clinical Center (DHCC)
- Primary care manager or health care provider will contact the DHCC to make arrangements with the VA for the referral (Use SF 513, Consultation Sheet)

# Learning Objectives

- Define appropriate DU medical management and review the service-specific DU programs
- Discuss Deployment Health Clinical Center's role in DU medical management
- Describe available tools for assisting physicians in DU medical management

# DHCC's Role in Implementing ASD(HA) DU Policy

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- Provide clinical guidance for implementing DoD DU Policy
  - Clinical consultation
  - Tools and resource material
- Serve as central archive for all DoD patient information related to DU exposure, testing, and follow-up for active duty and reserve personnel
- Coordinate referral of DU positive patients to Baltimore VA DU Follow-Up Program

# Learning Objectives

- Define appropriate DU medical management and review the service-specific DU programs
- Discuss Deployment Health Clinical Center's role in DU medical management
- Describe available tools for assisting physicians in DU medical management

# DHCC Depleted Uranium Page
## www.PDHealth.mil

DHCC
DEPLOYMENT HEALTH CLINICAL CENTER

- Policies and Directives
- Clinical Guidance
- Forms and Measures
- Fact Sheets
- Other DU-Related Information
- Education and Training
- Research
- Related Links

# PDH-CPG Toolbox Reference Card on Depleted Uranium

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- Six-sided laminated card on DU Medical Management Process Flow includes:
  - DoD Process Summary
  - Identification, Assessment, and Triage
  - Levels I, II, and III
  - Lab Results
  - Follow-Up


- Contained in Post-Deployment Health Clinical Practice Guideline (PDH-CPG) Desk Reference Toolbox distributed to Primary Care Providers in all MTFs Jul 04-May 05

- Located on www.PDHealth.mil

# Depleted Uranium Presentation
## www.PDHealth.mil

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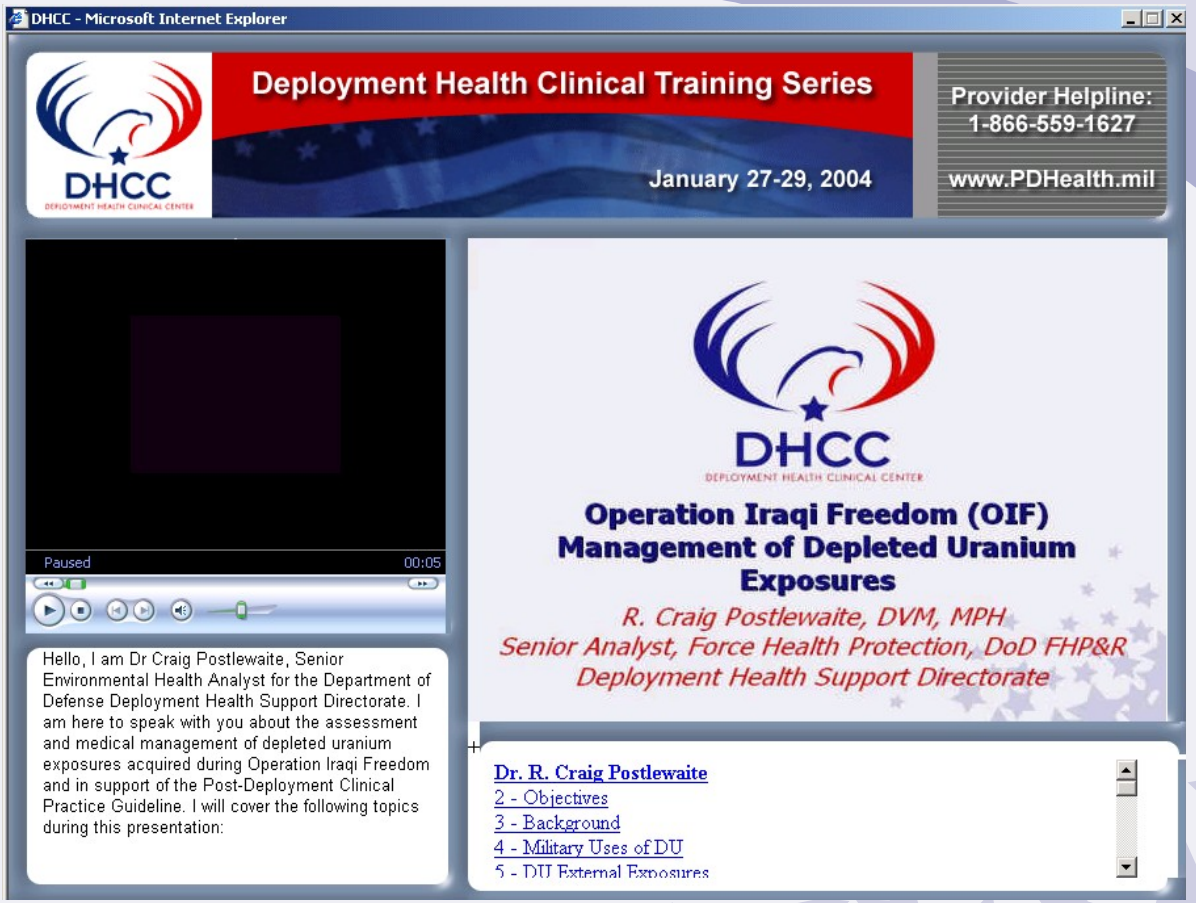
- Video
- Script
- Slides
- Located on www.PDHealth.mil and in Post-Deployment Health Clinical Practice Guideline (PDH-CPG)
  - Desk Reference
  - Toolbox



# Recent DU Fact Sheets

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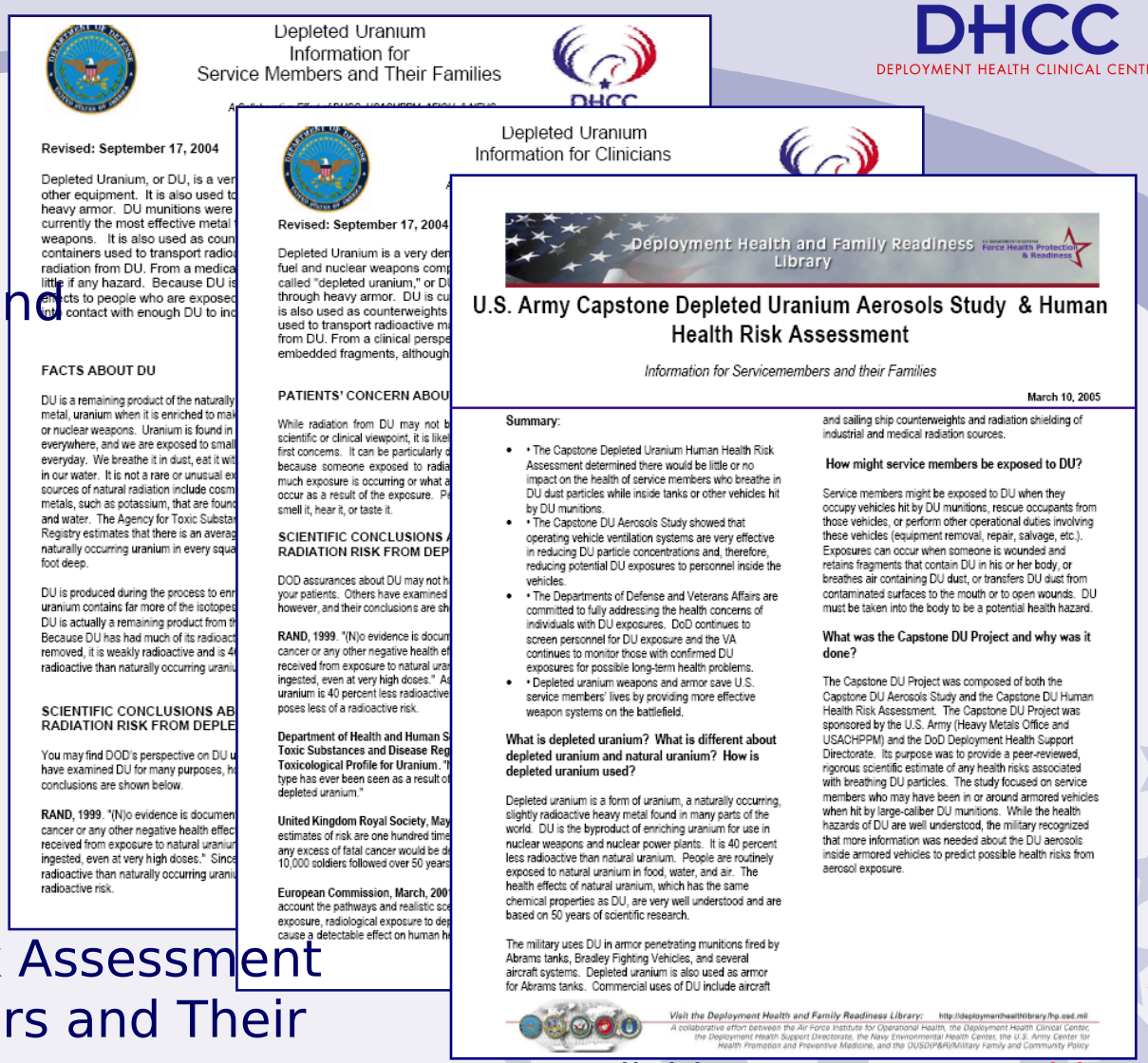
- Depleted Uranium Information for Service Members and Their Families 17 Sep 04
- Depleted Uranium Information for Clinicians 17 Sep 04
- US Army Capstone Depleted Uranium Aerosols Study & Human Health Risk Assessment For Service Members and Their Families 17 Sep 04




Available on www.PDHealth.mil

# Questions, Information, Assistance

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**DoD Deployment Health Clinical Cente**
**Walter Reed Army Medical Center**
**Building 2, Room 3G04**
**6900 Georgia Ave, NW**
**Washington, DC 20307-5001**

**202-782-6563**
**DSN:662**

**Provider Helpline**
**1-866-559-1627**

**E-mail: pdhealth@na.amedd.army.mil**
**Website: www.PDHealth.mil**

**Patient Helpline**
**1-800-796-9699**